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EXAMINER DANG, HUNG Q				
ART UNIT 2621		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/586,367

Applicant(s)

TAKASHIMA ET AL.

Examiner

Hung Q. Dang

Art Unit

2621

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Objections

Claims 4-5, 12, 25, and 30 are objected to because of the following informalities:

Claim 4 was misnumbered as claim 3 (second claim 3 in the claim). It has been renumbered as claim 4. However, formal correction of claim numbers is required.

Claims 5 and 12 recite "the identification information," which is not recited anywhere in the current claims and any base claims.

Claims 25 and 30 recite the formula of

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS_recording_rate[bps] \times 192}{R_{UD}[bps] \times 188 - TS_recording_rate[bps] \times 192}, \text{ which is}$$

believed to be

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS_recording_rate[bps] \times 188}{R_{UD}[bps] \times 188 - TS_recording_rate[bps] \times 192}$$

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2, 8-9, 15-16, and 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-4, 6, and 8-9 of copending Application No. 11/093066. Although the conflicting claims are not identical, they are not patentably distinct from each as follows.

Regarding claim 1 of this application, claims 1 and 3 of Application No. 11/093066 recite, "a data processing method of determining an arrangement of, with regard to an information recording medium, record data including an image data clip containing image data and an audio data clip containing audio data to be applied to a browsable slide show performing an audio reproduction processing in parallel with a consecutive reproduction of a still image, said data processing method comprising: an allowable jump range determination step of determining an allowable jump range in a reproduction processing for said information recording medium; a required jump time calculation step of calculating a time required for a jump on the basis of the allowable jump range determined in said allowable jump range determination step; and a buffer size determination step of determining a size of an image data buffer containing the image data read from the information recording medium and a size of an audio data buffer containing the audio data, on the basis of the required jump time calculated in

said required jump time calculation step and a data arrangement determination step of determining a data arrangement so as to set the image data clip and the audio data clip to be stored in said information recording medium, within the allowable jump range calculated in said allowable jump range determining step".

Regarding claim 2 of this application, claim 4 of Application No. 11/093066 recites, "said required jump time calculation step is a step of calculating, as to an identical intra- layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of the information recording medium, and of calculating, as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read data unit block of said information recording medium."

Claim 8 is rejected for the same reason as discussed in claim 1 above in view of claims 6 and 8 of Application No. 11/093066.

Claim 9 is rejected for the same reason as discussed in claim 2 above in view of claims 6, 8 and 9 of Application No. 11/093066.

Claim 15 is rejected for the same reason as discussed in claim 1 above.

Claim 16 is rejected for the same reason as discussed in claim 2 above.

Claim 20 is rejected for the same reason as discussed in claim 1 above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7 and 21-25 are rejected under 35 U.S.C. 101 the claimed invention is directed to non-statutory subject matter. .

Claims 1-7 and 21-25 are rejected under 35 U.S.C. 101 based on Supreme Court precedent and recent Federal Circuit decisions, a 35 U.S.C § 101 process must (1) be tied to a particular machine or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. In re Bilski et al, 88 USPQ 2d 1385 CAFC (2008); Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876).

An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the particular machine to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps are not tied to a particular machine and do not perform a transformation. Thus, the claims are non-statutory.

The mere recitation of the machine in the preamble with an absence of a machine in the body of the claim fails to make the claim statutory under 35 USC 101. Note the Board of Patent Appeals Informative Opinion Ex parte Langemyer et al.

Claims 20 and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 20 and 31 recite, "a computer program." However, it appears that such would reasonably be interpreted by one of ordinary skill in the art as software, per se. This subject matter is not limited to that which falls within a statutory category of invention because it is not limited to a process, machine, manufacture, or a composition of matter. Software does not fall within a statutory category since it is clearly not a series of steps or acts to constitute a process, not a mechanical device or combination of mechanical devices to constitute a machine, not a tangible physical article or object which is some form of matter to be a product and constitute a manufacture, and not a composition of two or more substances to constitute a composition of matter.

Claims 15-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 15-19 recite "an information recording medium" comprising only data, which are an arrangement of pure data and which do not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se.

Also, claims 15-19 recite "an information recording medium". However, the claims do not define a computer- readable recording medium and is thus non-statutory for that reason (i.e., "when functional descriptive material is recorded on some

computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" - Guidelines Annex IV). The examiner suggests amending the claim to embody functional descriptive data on "computer-readable recording medium" or equivalent in order to make the claim statutory. Any amendment to the claim would be commensurate with its corresponding disclosure (should be defined in the specification and not to comprise any non-statutory subject matters such as carrier waves or signals etc.)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21, 26, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada et al. (US Patent 6,122,436).

Regarding claim 21, Okada et al. disclose a data processing method for determining record data allocation on an information recording medium, said method characterized by having: a data size determining step of determining a data size as a minimum size of data to be stored in the information recording medium on the basis of allowable jump range information determined as an allowable range of a jump processing in a playback processing of said information recording medium (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *data size must be at least equal or greater*

than a predetermined amount); and a data allocation determining step of determining a data recording configuration in which a data block having said data size is so allocated as to be playable in the jump processing within said allowable jump range (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42).

Claim 26 is rejected for the same reason as discussed in claim 21 above.

Claims 31 is rejected for the same reason as discussed in claim 21 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20, 22-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US Patent 6,122,436) as applied to claims 21, 26, and 31 above.

Regarding claim 1, Okada et al. disclose a data processing method for determining record data allocation on an information recording medium having a recording layer (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42), the method characterized by having: an allowable jump range determining step of determining an allowable range of an intra-layer jump performed in a playback processing of said information recording medium (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 - allowable jump range corresponds to the range that yields the seeking time less than or equal to the time it takes to process all data in the buffer); a required jump time

calculating step of calculating a required time for the intra-layer jump on the basis of allowable jump range information determined in said allowable jump range determining step (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *the required jump time is the time it takes to start refilling the buffer before the seeking time from t2 to t3 in Fig. 2b*); and a consecutive data allocation size determining step of determining an allowable minimum consecutive data size of data to be stored in the information recording medium on the basis of the required jump time calculated in said required jump time calculating step (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42).

However, Okada et al. do not disclose the recording medium having a plurality of recording layers; an allowable jump range determining step of determining an allowable range of an inter-layer jump; a required jump time calculating step of calculating a required time for the inter-layer jump.

Ueki discloses a data processing method for determining record data allocation on an information recording medium having a plurality of recording layers (abstract; [0021]); an allowable jump range determining step of determining an allowable range of an inter-layer jump ([0129]; Fig. 11 - *allowable jump range corresponds to the range that yields the seeking time less than or equal to the time it takes to process all data in the buffer*); a required jump time calculating step of calculating a required time for the inter-layer jump ([0129]; Fig. 11 - *the required jump time is the time it takes to start refilling the buffer before the seeking time*).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the teachings of Ueki into the method disclosed by

Okada et al. in order to be able to use multi-layer recording media for the reasons of compactness and large capacity and also to guarantee continuous reproduction of data on multi-layer recording media.

Regarding claim 2, see the teachings of Okada et al. and Ueki as discussed in claim 1 above. However, Okada et al. and Ueki do not explicitly disclose said required jump time calculation step is a step of calculating: as to an intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of the information recording medium, and as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek, and an overhead time involved in a processing for a read data unit block of said information recording medium.

Official Notice is taken that steps of calculating, as to an identical intra-layer jump, a sum of a seek time of a pickup and an overhead time involved in a processing for a read data unit block of an information recording medium, and of calculating, as to an inter-layer jump, a sum of the seek time of the pickup, a pickup adjustment time involved in an inter-layer seek in case of a dual-layer recording medium, and an overhead time involved in a processing for a read data unit block of the information recording medium are well known in the art.

One of ordinary skill in the art would have recognized that the seeking time disclosed by Okada et al. and Ueki should be modified to include all kinds of overhead time that involve in the jump to guarantee that the buffer in Okada et al. would not

underflow and the reproduction of the data stream in Okada et al. and Ueki would not be interrupted.

Regarding claim 3, Okada et al. also disclose said consecutive data allocation size determining step is a step including an allowable minimum playback time determining step of determining an allowable minimum playback time as a playback time corresponding to the allowable minimum consecutive data size of the data to be stored in the information recording medium, and determining the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of said allowable minimum playback time (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42).

Regarding claim 4, Okada et al. also disclose said allowable minimum playback time determining step is a step of calculating the allowable minimum playback time $[t]$ on the basis of a jump time $[T_{JUMP}]$, a data read out rate $[R_{ud}]$ from a disc in a drive and a data recording rate $[RTS]$ in accordance with the following equation: $t = T_{JUMP} \times R_{ud} / (R_{ud} - RTS)$ (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *let's t be the minimum playback time. This minimum playback time is the time needed to playback a minimum amount of data recorded continuously [a1, a2]. Let's A be this minimum amount. We have $t = A / RTS$. Also the time needed to read out this minimum amount is $t_r = A / V_a$. According to Fig. 2b, we have $t_r (V_a - V_b) = T_{jump} \times V_b$ or $A (V_a - V_b) = T_{jump} \times V_b \times V_a$ or $t \times RTS (V_a - V_b) = T_{jump} \times V_b \times V_a$ or $t = T_{jump} \times V_a / (RTS (V_a - V_b) / V_b)$ or $t = T_{jump} \times V_a / (RTS \times V_a / V_b - RTS)$. In order to playback the data correctly, the recording frame rate and the playback frame rate must be the same or $RTS = V_b$. Thus, Okada et*

al. disclose $t - T_{\text{jump}} \times Va / (Va - RTS)$. Since Va is the data read out rate, which corresponds to Rud , Okada et al. also disclose $t = TJUMP \times Rud / (Rud - RTS)$; and said consecutive data allocation size determining step is a step of determining the allowable minimum consecutive data size of the data to be stored in the information recording medium on the basis of the allowable minimum playback time $[t]$ calculated by said equation in accordance with the following equation: $U_{\text{size}} = t \times RTS$ (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42).

Regarding claim 5, Okada et al. also disclose a data setting processing step of identifying jump origin data and jump destination data that can be generated in the playback processing of the stored data in the information recording medium and setting a distance between the jump origin data and the jump destination data within the allowable jump range determined in said allowable jump range determining step on the basis of the identification information (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42).

Regarding claim 6, Okada et al. also disclose said data setting processing step carries out a processing of setting the distance between the jump origin data and the jump destination data within said allowable jump range by an interleave processing of clip data set as a data unit of storage target data on the information recording medium (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *audio data and still picture data are interleaved*).

Regarding claim 7, Okada et al. also disclose a data recording step of performing data recording on the information recording medium in a data unit larger than or equal

to the consecutive data allocation size determined in said consecutive data allocation size determining step (Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *the amount of data must be at least or equal to a predetermined amount*).

Claim 8 is rejected for the same reason as discussed in claim 1 above.

Claim 9 is rejected for the same reason as discussed in claim 2 above.

Claim 10 is rejected for the same reason as discussed in claim 3 above.

Claim 11 is rejected for the same reason as discussed in claim 4 above.

Claim 12 is rejected for the same reason as discussed in claim 5 above.

Claim 13 is rejected for the same reason as discussed in claim 6 above.

Claim 14 is rejected for the same reason as discussed in claim 7 above.

Claim 15 is rejected for the same reason as discussed in claim 1 above.

Claim 16 is rejected for the same reason as discussed in claim 2 above.

Claim 17 is rejected for the same reason as discussed in claim 3 above.

Claim 18 is rejected for the same reason as discussed in claim 5 above.

Claim 19 is rejected for the same reason as discussed in claim 6 above.

Claim 20 is rejected for the same reason as discussed in claim 1 above.

Regarding claim 22, Okada et al. and Ueki also disclose said data size determining step is a step of determining a data size as a minimum size of data to be stored in the information recording medium on the basis of the allowable jump range information of an intra-layer jump and an inter-layer jump (Okada et al.: Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42. Ueki: abstract, [0021]; [0129]; Fig. 11).

Regarding claim 23, Okada et al. also disclose said data size determining step is a step of determining a data size on the basis of information in which a data recording rate [RTS] is made corresponding to the allowable minimum data size of the data to be stored in the information recording medium (Okada et al.: Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *also see the discussion of claim 4 above*). Although Okada et al. do not explicitly disclose a table in which a data recording rate [RTS] is made corresponding to the allowable minimum data size of the data. It would be obvious to use a table to record such information in order to eliminate constant calculations of values of recording rates.

Regarding claim 24, Okada et al. also disclose said data size determining step is a step of determining a data size on the basis of a relational expression between a data recording rate [RTS] and the allowable minimum data size of the data to be stored in the information recording medium (Okada et al.: Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *see also the discussion of claim 4 above*).

Regarding claim 25, Okada et al. also disclose said relational expression is an expression shown by the following equation: $TS_recording_rate[bps] \times 192$

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS_recording_rate[bps] \times 188}{R_{UD}[bps] \times 188 - TS_recording_rate[bps] \times 192},$$

setting that an allowable minimum data size of the data to be stored in the information recording medium is S_{EXTENT} , a total jump time is T_{JUMP} , a data read out rate from a disc in a drive is R_{UD} , and a data recording rate [RTS] is $TS_{recording_rate}$ (Okada et al.: Fig. 2a; Fig. 2b; column 20, line 66 – column 21, line 42 – *from the discussion of claim 4 above*, we have

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[s] \times R_{UD}[byte \text{ per second}] \times R_{TS}[byte \text{ per second}]}{R_{UD}[byte \text{ per second}] - R_{TS}[byte \text{ per second}]}$$

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{R_{TS}[bps]}{R_{UD}[bps] - R_{TS}[bps]}. \text{ Since } R_{TS} = TS_recording_rate \times \frac{192}{188} \text{ as}$$

prescribed by Blu-ray disc standards – see current application [0123] and a fact that it is well known that a packet includes a 4-byte header and 188 application data – see Yoo et al., we have

$$S_{EXTENT}[byte] \geq \frac{T_{JUMP}[ms] \times R_{UD}[bps]}{1000 \times 8} \times \frac{TS_recording_rate[bps] \times 188}{R_{UD}[bps] \times 188 - TS_recording_rate[bps] \times 192}$$

Claim 27 is rejected for the same reason as discussed in claim 22 above.

Claim 28 is rejected for the same reason as discussed in claim 23 above.

Claim 29 is rejected for the same reason as discussed in claim 24 above.

Claim 30 is rejected for the same reason as discussed in claim 25 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571)270-1116. The examiner can normally be reached on IFT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI Q. TRAN can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/
Examiner, Art Unit 2621

/Thai Tran/
Supervisory Patent Examiner, Art Unit 2621